

NATURAL RESOURCES CONSERVATION SERVICE CONSERVATION PRACTICE STANDARD

PEST MANAGEMENT

(Acre)

CODE 595

DEFINITION

Utilizing environmentally sensitive prevention, avoidance, monitoring and suppression strategies, to manage weeds, insects, diseases, animals and other organisms (including invasive and non-invasive species), that directly or indirectly cause damage or annoyance.

PURPOSES

This practice is applied as part of a Resource Management System (RMS) to support one or more of the following purposes:

- Enhance quantity and quality of commodities.
- Minimize negative impacts of pest control on soil resources, water resources, air resources, plant resources, animal resources and/or humans.

CONDITIONS WHERE PRACTICE APPLIES

Wherever pests will be managed.

CRITERIA

General Criteria Applicable to All Purposes

A pest management component of a conservation plan shall be developed.

All methods of pest management must comply with Federal, State, and local regulations, including management plans for invasive pest species, noxious weeds and disease vectors. Compliance with the Food Quality Protection Act (FQPA); Federal Insecticide, Fungicide and Rodenticide Act (FIFRA); Worker Protection Standard (WPS); and Interim Endangered

Species Protection Program (H7506C) is required for chemical pest control.

Integrated Pest Management (IPM) that strives to balance economics, efficacy and environmental risk, where available, shall be incorporated into planning alternatives. (IPM is a sustainable approach to pest control that combines the use of prevention, avoidance, monitoring and suppression strategies, to maintain pest populations below economically damaging levels, to minimize pest resistance, and to minimize harmful effects of pest control on human health and environmental resources. IPM suppression systems include biological controls, cultural controls, host plant resistance, and the judicious use of chemical controls.) Integrated Pest Management (IPM) principles to be applied include:

- Evaluate the option for genetic, biological, mechanical, cultural, and/or chemical pest control methods.
- Base treatment on pest populations as established through:
 - ❖ Field monitoring.
 - ❖ Field and crop history, or
 - ❖ Pest forecasting methods.
- Manipulate timing, placement and method of pest control to minimize the potential for negative environmental impact while maintaining satisfactory pest control.

An appropriate set of mitigation techniques must be planned and implemented to reduce the environmental risks of pest management activities in accordance with quality criteria in the local Field Office Technical Guide. Mitigation techniques include practices like a Filter Strip or

Conservation Crop Rotation, and management techniques like application method or timing.

All methods of pest management must be integrated with other components of the conservation plan.

Clients shall be instructed to pay special attention to all environmental hazards and site-specific application criteria listed on pesticide labels and contained in Extension and Crop Consultant recommendations.

Additional Criteria to Protect Quantity and Quality of Commodities

As an essential component of both commodity-specific IPM and IPM general principles, clients shall be encouraged to use the minimum level of pest control necessary to meet their objectives for commodity quantity and quality.

Additional Criteria to Protect Soil Resources

In conjunction with other conservation practices, the number, sequence and timing of tillage operations shall be managed to maintain soil quality and maintain soil loss at or below the soil loss tolerance (T) or any other planned soil loss objective. The erosion prediction tool approved for use in New Hampshire is the Revised Universal Soil Loss Equation. Soil quality rating procedures such as the Soil Conditioning Index (SCI) shall be used to evaluate potential impacts.

Clients shall be encouraged to pay special attention to pesticide label instructions for limiting pesticide residues in soil that may negatively impact non-target plants, animals, humans, and ground water.

Additional Criteria to Protect Water Resources

Pest management environmental risks, including the impacts of pesticides in ground and surface water on humans and non-target plants and animals, must be evaluated for all identified water resource concerns. Pest management plans shall be evaluated using the NRCS Windows Pesticide Screening Tool (WIN-PST).

When a chosen alternative has significant potential to negatively impact important water resources, (e.g., WIN-PST "Extra High", "High" or "Intermediate" soil/pesticide human risk ratings in the drainage area of a drinking water reservoir), an

appropriate set of mitigation techniques must be put in place to address risks to humans and non-target plants and animals. Mitigation alternatives to reduce potential surface water impacts include using such practices as filter strips, no-till, mulch tillage, and contour farming to minimize the amount of runoff leaving the field. Groundwater mitigation alternatives include such practices as mulch tillage, residue management, and application timing considering weather and soil moisture conditions. Clients shall be encouraged to pay special attention to pesticide label instructions for limiting pesticide residues in leachate and runoff that may negatively impact non-target plants, animals and humans.

The number, sequence and timing of tillage operations shall be managed in conjunction with other sediment control tactics and practices, in order to minimize sediment losses to nearby surface water bodies.

Additional Criteria to Protect Air Resources

Clients shall be encouraged to pay special attention to pesticide label instructions for minimizing volatilization and drift that may negatively impact non-target plants, animals and humans.

Additional Criteria to Protect Plant Resources

Clients shall be encouraged to pay special attention to pesticide label instructions including those directed at:

- Preventing misdirected pest management control measures that negatively impact plants (e.g., removing pesticide residues from sprayers before moving to the next crop and properly adjusting cultivator teeth and flame burners).
- Appropriate climatic conditions, crop stage, crop species/variety, soil moisture, pH, and organic matter in order to protect plant health.
- Limiting pesticide residues in soil that can carry over and harm subsequent crops.

Additional Criteria to Protect Animal Resources

Clients shall be encouraged to pay special attention to pesticide label instructions that

minimize negative impacts to animals (i.e. days to harvest for using hay for feed).

Additional Criteria to Protect Humans

Clients shall be encouraged to pay special attention to pesticide label instructions that minimize negative impacts to humans.

CONSIDERATIONS

If commodity-specific IPM is not available, the following IPM principles should be considered:

- Prevention, such as using pest-free seeds and transplants, cleaning tillage and harvesting equipment between fields, irrigation scheduling to avoid situations conducive to disease development, etc.
- Avoidance, such as using pest resistant varieties, crop rotation, trap crops, etc.
- Monitoring, such as pest scouting, soil testing, weather forecasting, etc. to help target suppression strategies and avoid routine preventative pest control.
- Suppression, such as cultural, biological and chemical controls, that can reduce a pest population or its impacts. Chemical controls should be used judiciously in order to minimize environmental risk and pest resistance.

Adequate plant nutrients and soil moisture, including favorable pH and soil conditions, should be available to reduce plant stress, improve plant vigor and increase the plant's overall ability to tolerate pests.

On irrigated land, irrigation water management should be designed to minimize pest management environmental risk.

PLANS AND SPECIFICATIONS

The pest management component of a conservation plan shall be prepared in accordance with the criteria of this standard and shall describe the requirements for applying the practice to achieve its intended purpose(s).

As a minimum, the pest management component of a conservation plan shall include:

- Plan map and soil map of managed site, if applicable (use RMS plan maps if available).
- Location of sensitive resources and setbacks, if applicable (use RMS plan maps if available).
- Environmental risk analysis, with approved tools and/or procedures, for probable pest management recommendations by crop (if applicable) and pest.
- Interpretation of the environmental risk analysis and identification of appropriate mitigation techniques.
- Operation and maintenance requirements.

OPERATION AND MAINTENANCE

The pest management component of a conservation plan shall include appropriate operation and maintenance items for the client. These may include:

- Review and update the plan periodically in order to incorporate new IPM technology, respond to cropping system and pest complex changes, and avoid the development of pest resistance.
- Maintain mitigation techniques identified in the plan in order to ensure continued effectiveness.
- Follow the guidelines set forth in the Worker Protection Standards, including the training on "non-family employees".
- Develop a safety plan for individuals exposed to chemicals, including telephone numbers and addresses of emergency treatment centers for individuals exposed to chemicals and the telephone number for the nearest poison control center. The National Poison Information Center telephone number is:

1-800-222-1222

and will connect a person with the state emergency office through the 911 system.

For advice and assistance with **emergency spills** that involve agrichemicals, the local emergency telephone number should be provided. The national 24-hour CHEMTREC telephone number may also be given:

1-800-424-9300

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- Follow label requirements for mixing/loading setbacks from wells, intermittent streams and rivers, natural or impounded ponds and lakes, or reservoirs. State or local regulations may be more restrictive such as the information in Pesticide Applicator Training PAT fact sheets available on the Web at:
<http://ceinfo.unh.edu/agpat.htm>
- Post signs according to label directions and/or Federal, State, and local laws around sites that have been treated. Follow restricted entry intervals.
- Dispose of pesticides and pesticide containers in accordance with label directions and adhere to Federal, State, and local regulations.
- Read and follow label directions and maintain appropriate Material Safety Data Sheets (MSDS).
- Calibrate application equipment according to Extension and/or manufacturer recommendations before each seasonal use and with each major chemical change when using granular material.
- Replace worn nozzle tips, cracked hoses, and faulty gauges.
- Maintain records of pest management for at least two years. Pesticide application records shall be in accordance with USDA Agricultural Marketing Service's Pesticide Record Keeping Program and state specific requirements. As a minimum, the system should provide for recording:

1. Crop selection and rotation

- ✓ Previous crops
- ✓ Present crops

2. Cultural Practices

- ✓ Type(s) of tillage used
- ✓ Planting and harvesting dates

3. Soil Fertility (crop and pasture land)

- ✓ Soil test results

- ✓ Nutrients applied
- ✓ Prior manure or organic soil amendments

4. Pests

- ✓ Identified pests
- ✓ Population levels

5. Control tactics

- ✓ Tactic(s) used
- ✓ Pesticide information required by Federal and State regulations
- ✓ Results of control efforts

REFERENCES

UNH Cooperative Extension Publications Center at: Nesmith Hall, 131 Main Street, Durham, NH 03824, phone: 862-2346

UNH Cooperative Extension IPM Program at:
<http://ceinfo.unh.edu/Agriculture/Documents/agipm.htm>

Integrated Pest Management in the Northeast web site information at: <http://northeastipm.org/>

Northeast IPM Resources on the Net at:
<http://www.nysaes.cornell.edu/ipmnet/links/aaa.html>

The Pennsylvania Agronomy Guide for crop and pest management on line at:
<http://AgGuide.agronomy.psu.edu/>

New York State, Cornell Cooperative Extension, Integrated Pest Management Program on line at:
<http://www.nysipm.cornell.edu/index.html>

Cornell Guide for Integrated Field Crop Management web site at:
<http://www.css.cornell.edu/extension/CornellGuide.html>

CDMS, Ag Chemical Information Services at
www.cdms.net/pfa/LupdateMsg.asp